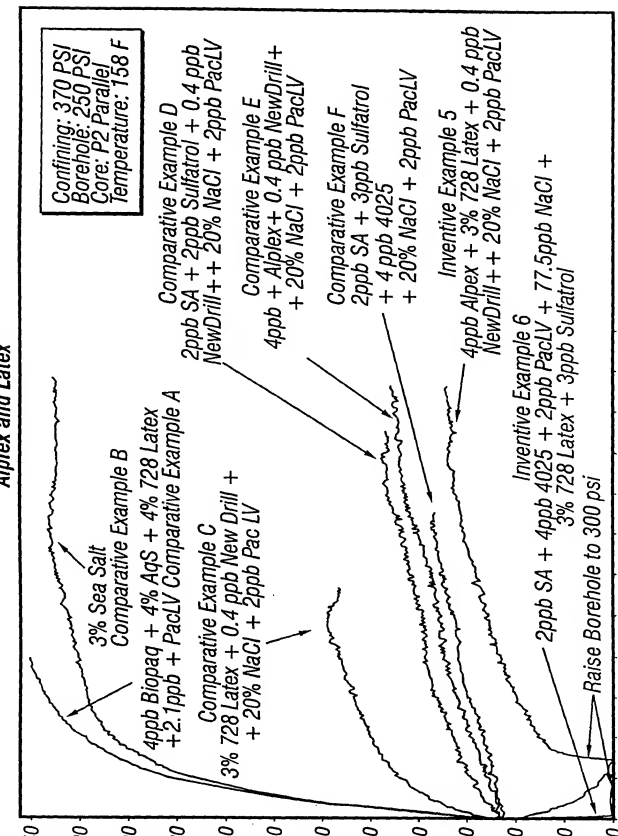
Alplex and Latex
Confining: 370 PSI
Borehole: 250 PSI
Core: P2 Parallel
Temperature: 158 F
3% Sea Salt
Comparative Example B
4ppb Biopaq + 4% AqS + 4% 728 Latex
+2.1ppb + PacLV Comparative Example A
Comparative Example C
3% 728 Latex + 0.4 ppb New Drill +
+ 20% NaCl + 2ppb Pac LV
Comparative Example D
2ppb SA + 2ppb Sulfatrol + 0.4 ppb
NewDrill++ 20% NaCl + 2ppb PacLV
Comparative Example E
4ppb + Alplex+ 0.4 ppb NewDrill +
+ 20% NaCl + 2ppb PacLV
Comparative Example F
2ppb SA + 3ppb Sulfatrol
+ 4 ppb 4025
+ 20% NaCl + 2ppb PacLV
Inventive Example 5
4ppb Alpex + 3% 728 Latex + 0.4 ppb
NewDrill++ 20% NaCl + 2ppb PacLV
Inventive Example 6
2ppb SA + 4ppb 4025 + 2ppb PacLV + 77.5ppb NaCl +
3% 728 Latex + 3ppb Sulfatrol
Raise Borehole to 300 psi
Formation Pressure (psi)
Hours
0
20
40
60
80
100
120
140
160
180
200
220
240
0
5
10
15
20
25
30
35
40
45
50
55
60

FIG. 1

Surfactant effect on Gencal 7463 particle size in 20% NaCl/1 lb/bbl NEW-DRILL® PLUS/
1 lb/bbl XAN-PLEX™ D / 0.5 lb/bbl sodium gluconate/3 lb/bbl NaAlO2/ 5% by vol Gencal 7463
Volume of Particles Smaller Than 1μ m, %
AFTER STATIC AGING AT 150°F FOR 16 HOURS
0
20
40
60
80
100
1
95
94
89
87
87
83
76
75
48
22
19
17
17
12
12
12
7
6
6
5
5
3
3
2
2
2
2
1
BASE
AMPHOSOL HCG
AMPHOSOL CA
MIRANATE LEC
AMPHOSOL LDB
MIRATAINE BB
AMPHOSOL LB
EXP-152
AMPHOSOL CDB
MIRANOL JEM
GLUCOPON 425 N
GLUCOPON 220 UP
BURCO NPS-816
TEQ-LUBE
MIRANOL
MIRANATE CBS
MIRANATE B
MIRATINE JC HA
AMPHOSOL CG
BURCO NPS-225
A-X 246-3
RDP 1668 DF
A-X 021-11
MIRATAINE ASC
CLY-TROL
TEGOPREN 6950
AEROSOL OT-B
SOPROPHOR 796/P
Surfactants (2 lb/bbl)

FIG. 2

Influence of polymer resins (3 lb/bbl) on Gencal 7463 particle size distributions after 16 hours, 150°F hot roll in 20% NaCl / 0.75 lb/bbl XAN-PLEX® D / 0.5 lb/bbl sodium d-gluconate / 0.4 lb/bbl NEW-DRILL® PLUS/2 lb/bbl BIO-PAQ® / 3 lb/bbl $NaAlO_2$/ 3% Gencal 7468 /1 lb/bbl EXP-152

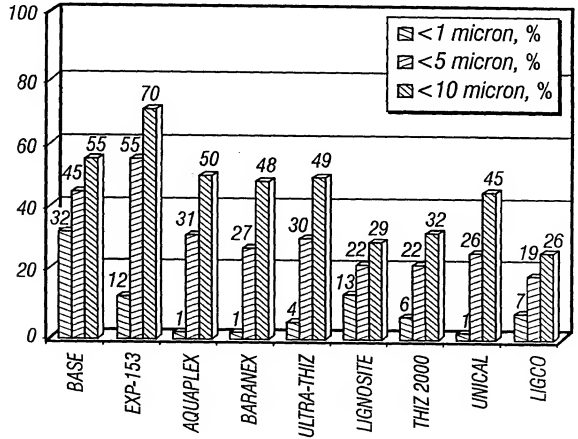

FIG. 3

EXP-154 versus ALPLEX® in 12 lb/gal mud. Base: 20% NaCl / 0.5 lb/bbl XAN-PLEX® D / 2 lb/bbl BIO-LOSE®/ 1 lb/bbl NEW-DRILL® PLUS / 3% EXP-155 / 150 lb/bbl MIL-BAR® / 27 lb/bbl Rev Dust

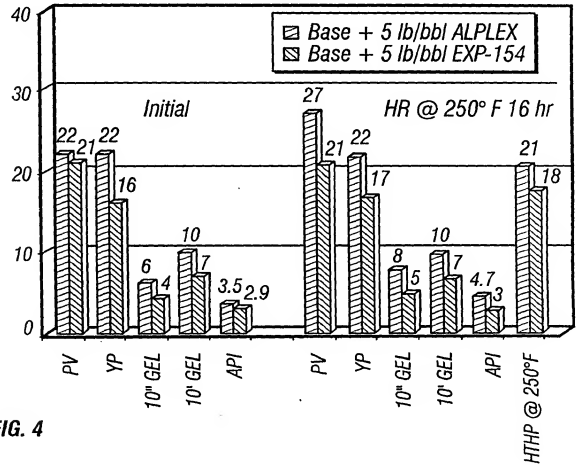

FIG. 4

PPT test results for ALPLEX®, EXP-154/EXP-155, and ISO-TEQ® fluids

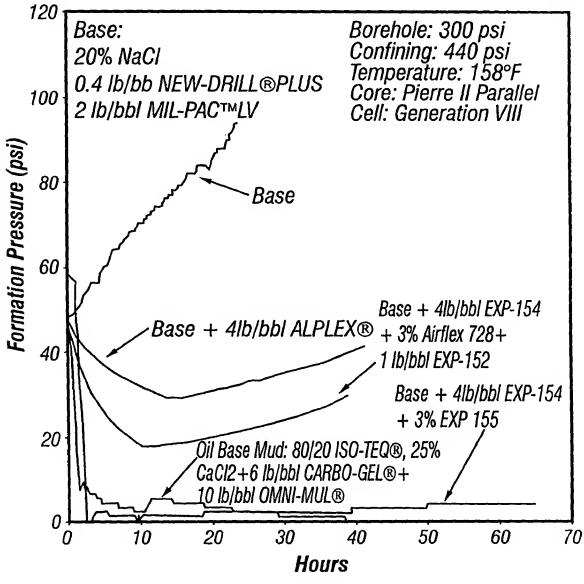

FIG. 5

Effects of circulation on EXP-154/EXP-155 PPT mud performance

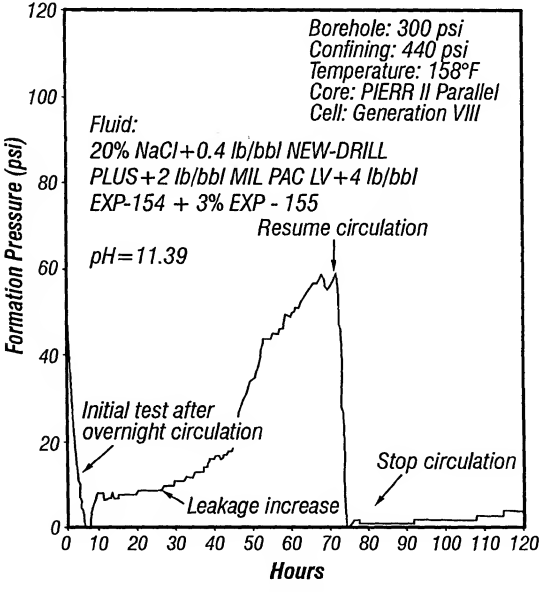

FIG. 6

Effects of latex on mud properties in 9.6 lb/gal 20% NaCl fluid after 16 hour, 250°F hot roll. Base: 20% NaCl / 1 lb/bbl XAN-PLEX® D/ 0.4 lb/bbl NEW-DRILL® PLUS / 2 lb/bbl BIO-PAQ® / 5 lb/bbl EXP-154 / 10 lb/bbl MIL-CARB® /27 lb/bbl Rev Dust

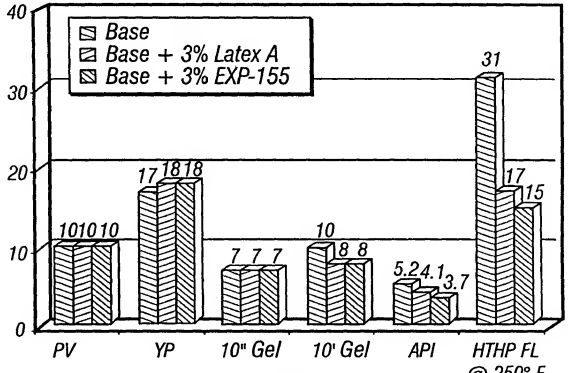

FIG. 7

Effects of latex on mud properties in 12 lb/gal fluid after hot rolling for 16 hours, at 250°F. Base: 20% NaCl / 0.75 lb/bbl XAN-PLEX® D/ 0.4 lb/bbl NEW-DRILL® PLUS / 3 lb/bbl BIO-PAQ®/ 5 lb/bbl EXP-154 / 150 lb/bbl MIL-BAR® /27 lb/bbl Rev Dust

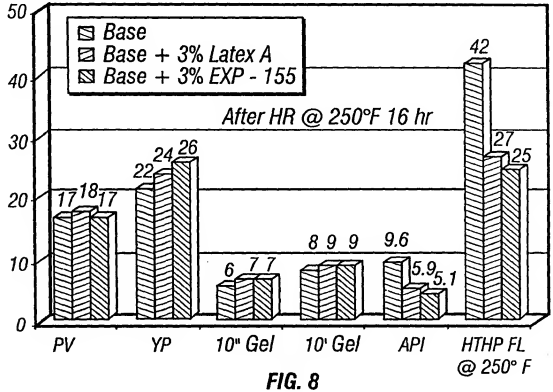

FIG. 8

96 hour Mysidopsis bahia range finder results for experimental products in 12 lb/gal fluids. Base: 20% NaCl / 0.5 lb/bbl XAN-PLEX® D / 0.4-1 lb/bbl NEW-DRILL® PLUS / 2 lb/bbl MIL-PAC® LV (or BIO-PAQ®) / 150 lb/bbl MIL BAR®.

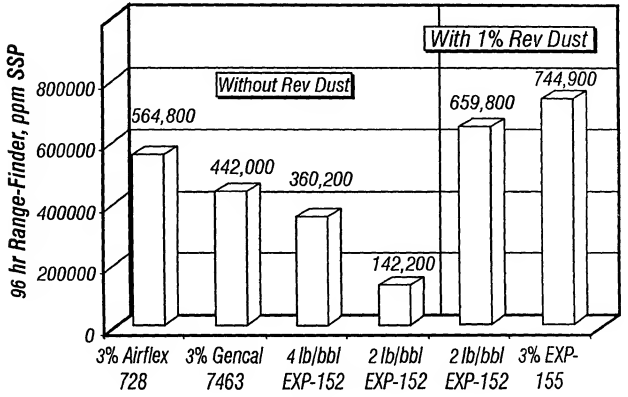

FIG. 9

HTHP fluid loss rate on 50 mD cement disk for the mud containing 3% latex polymer after being hot rolled at 250° F for 16 hours.

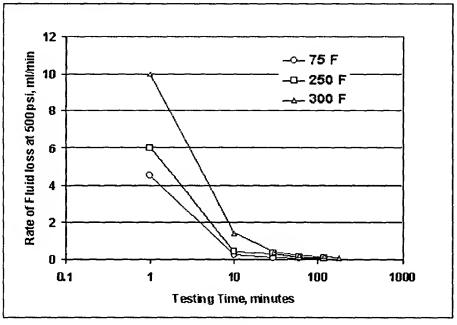

Fig. 10

Internal filter cake formed inside 50 md disk by the mud containing 3% Latex after HTHP testing at 300° F for 4 hours

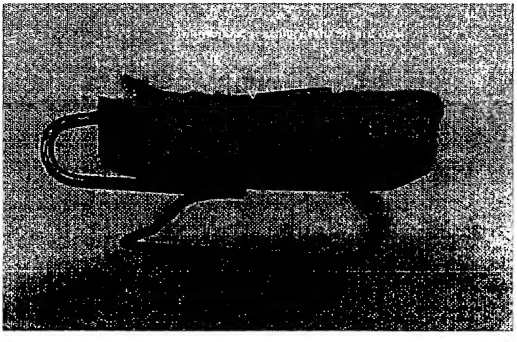

Fig. 11